Underlying Factors governing Ethical Responsibility of Statutory Auditors: An Empirical Analysis

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Abstract: Declining ethical responsibility of statutory auditors is reducing the market vitality of audit and sustenance of economy. In this backdrop, the study examines opinions of statutory auditors and other related groups of respondents on select issues that may govern ethical orientation of statutory auditors. Exploratory Factor Analysis is conducted on the data collected and out of 15 variables, 5 underlying factors are identified. Major factors identified are related to practical approaches to ethical education, measures taken to implement ethics in education, punitive action and inner values, public awareness and global regulatory convergence, regulatory framework and recent events. Practical approach to ethical education is the most important factor governing ethical responsibility of statutory auditors.

Key-words: Corporate scandal, ethics, exploratory factor analysis, stakeholders' interest, statutory audit.

1. Introduction

Recent cases of audit failures are reducing the market vitality of audit. Regulators are trying to develop ideas and initiate steps to restore the lost image of the accounting profession. The mission was conceived in the context of the current corporate environment that repeatedly points out the deteriorating ethical commitment of statutory auditors. Statutory financial audit is very vital for sustenance of our economy (Elliott, 1995). But our recent experiences tell us that statutory auditors over the last few decades are failing in fulfilling their professional responsibilities (Saha & Roy, 2017). Increased competition in the auditing profession, saturation of the market could be some of the reasons why statutory auditors are compromising with their ethical responsibilities towards the stakeholders of their corporate client. They are continuously trying to identify the lacuna in the existing regulation and using it for fulfilling their own personal economic motives (Saha, 2015). This entire system ultimately demeans the usefulness of financial statements. Declining reputation of the auditing profession is ultimately hitting the reputation of the company and economy as a whole (Vittal, 2000). In this backdrop, when the regulatory stricture is failing to ensure quality audit, it would not be superfluous to appoint additional means to ensure ethical commitment of statutory auditors.

This present study is an attempt to identify underlying factors that may govern ethical responsibility of statutory auditors. These factors would help to unearth the assurance services in a wider perspective and help the regulators to refurbish the accounting profession.

2. Review of Literature

A series of conceptual and empirical researches conducted by eminent scholars covers different areas of ethical responsibility of statutory auditors. Some of the significant studies are discussed here. Elliott (1995) in his article proposed some steps to increase the market vitality of audit in light of recommendation given in the American Institute of Certified Public Accountant (AICPA) Special Committee Report. The author discussed the scope and potential of assurance service as a whole. Research had been conducted to find out the potential services by professional accountants based on customer needs. In-depth interviews had been conducted with institutional investors, managers, Board of Directors (BoD), suppliers, creditors, regulators and Government officials to find out the wider scope of attestation services nowadays. Interviews had also been conducted with academician and students of big Universities to include course

work on auditing in the accounting curriculum and to promote academic research in this area. According to the author, this would help audit practitioner to know the current situation. The model was completely customer driven and aimed at increasing auditors' competence. Lovell (1998) in his study pointed out how tension and conflicts prevailed in the management of public sector enterprises and their impact on ethical orientation of statutory auditors'. Vittal (2000) conducted a conceptual study of ethics and code of conduct in the accounting profession. Professional ethics in Chartered Accountancy profession, the impact of globalisation on accounting regulation and professional ethics of accounting profession in other countries were thoroughly studied and comparatively analysed. The study observed that at the advent of globalisation, there had been a paradigm shift in the accounting profession. In order to help accounting professionals especially auditors in providing ethical service, there should be an integration of ethical code in India and other countries of the world. Earley & Patrick (2004) in their study empirically analysed impact of Enron scam on moral reasoning of accounting students. The moral reasoning was analysed in pre and post-Enron period using certain educational intervention tools, like Accounting Ethical Dilemma Instrument and Defining Issue Test score, etc. It was observed that Enron event did not have a significant influence on moral reasoning of accounting students. Jeffrey (2004) in his edited book covered different areas, such as professional responsibility, professionalism, the ethical dilemma in resolving conflicts of interest among different related groups in terms of incentives and goals and the method of resolving them, and accountability of the accounting professionals. The book also contained guidelines for an auditor that stemmed from the code of conduct, rules, and securities exchange regulations. It also described the interactions between accountants, auditors, client, industries, regulators and standard-setting agencies and the impact of these interactions on guidelines for auditors. Mayper, Pavur, Merino, & Hoops (2005) in their research paper empirically analysed the impact of accounting education on ethical values of accounting students. The theory of Veblem was discussed which stated that autonomous bodies, like academic institutions also ran with an economic motive. A few hypotheses were developed relating to impact of accounting education on ethical values of students. Opinions of accounting students were gathered and empirically analysed. The study observed that more reforms in accounting education were needed to make students aware of ethical dimensions. Hasnas (2007) in this article examined the growing divergence between managers' ethical and legal obligation. After describing traditional

business ethics, the author identified the features of federal criminal law and law enforcement obligation and how they were affecting the traditional approach with an illustration of workplace confidentiality. As a measure of solution, the author suggested reforming the traditional approach of organisational justice, privacy, and ethical auditing. In order to prove his conclusion, the author also provided one case study on KPMG abusive tax shelter. Chauhan & Gupta (2007) theoretically analysed the need for ethical audit in modern times business decision making. They proposed ethical audit in every organisation that set the limit of acceptable behaviour in an organisation. They also proposed its implementation internationally taking into consideration local societal differences. Ethics might not provide money but it gave immense mental satisfaction. According to them, implementation of ethical audit in an organisation would reduce internal and external inconsistency in an organisation. Ghaffari, Kyriacou, & Brennan (2008) in their study reviewed incorporation of ethics in accounting curriculum of different Universities in the United Kingdom (UK). A survey was conducted on the course design and curriculum of accounting of different universities in the UK. Ethics had already been incorporated into the accounting curriculum of major Universities. Following recent corporate scandals, it had been given more importance in the studies. However, course designs of different universities were different. Koumbiadis & Okpara (2008) in their study empirically analysed stages of ethical behaviour of accounting students. Stages of ethical behaviour of accounting students were analysed with reference to ethical behaviour theory developed by Lawrence Kohlberg. Perceptions of 300 students enrolled in 5-year accounting course in different Universities at New York on the role of auditors in recent corporate accounting scandals are gathered and empirically analysed. The findings of the study suggested that students belonging to different stages of ethical behaviour responded differently to the questions. This was exactly in conformity with Kohlberg's theory.

3. Research Gap

Past Studies on ethical responsibility of statutory auditors mainly covers both conceptual and empirical researches conducted in this field. The concept of ethics, professionalism and ethical dilemma are the main theme of studies in existing literature. Application of ethics in business, management, accounting, and auditing are conceptually enumerated there. Professional ethics in the accounting profession is theoretically discussed with special emphasis on the code of

conduct. Ethical behaviour of statutory auditors is also empirically analysed subject to recent corporate accounting scandals. Moreover, in recent studies, the impact of ethical education on moral reasoning of statutory auditors is analysed with an analytical approach. Influence of global convergence of regulatory framework on ethical behaviour of an auditor is critically analysed in existing studies.

In this backdrop, it is imperative to pursue a research on ethical responsibility of statutory auditors. More so, some gaps still persist in existing literature. Truly speaking, a number of empirical researches are comparatively less in this field. Determinants of ethical responsibility are not identified in the literature reviewed so far. Finally, opinions of different sections of individuals who are related to the field of auditing are not empirically analysed. Based on the identified gap in existing researches, the objective of the current study is made in the following section.

4. Objectives

The objectives of the current study are the following:

(i) To identify underlying factors governing ethical responsibility of statutory auditors (*Refer to Section 6.3.2*);

(ii) To develop the component plot in the rotated space based on extracted factors and their underlying variables (*Refer to Section 6.3.3*);

(iii) To generate factor models for each extracted factor (*Refer to Section 6.3.4*);

(iv) To ascertain fitness of the factor model (*Refer to Section 6.3.5*);

(v) To draw a suitable conclusion of the study (*Refer to Section 7*).

5. Research Methodology

Type of Research	Empirical Research
Nature of Research Design	Exploratory Research Design (Kothari, 2010)
Nature of Data	Primary as well as Secondary
Secondary Data	Books, Journal Articles, Newspaper Articles, Legislations, Reports

Primary Data	Perceptions of Respondents from field survey	
Method of Sampling	Non-Probability Convenience Sampling Technique (Ho, et. al., 1997)	
Sample Design		
Respondents Category	*Number of Respondents Initially Selected*	*Final Number of Respondents*
a) Chartered Accountants (CAs)	150	101
b) Cost and Management Accountants (CMAs)	150	94
c) Academicians	150	111
d) Students	150	118
e) Investors	100	86
f) Corporate Executives	100	91
Total	**800**	**601**
Survey Area	Kolkata, West Bengal	
Survey Period	June 2015 to December 2015	
Data Collection Tool	Pre-Tested, Close Ended, Structured Questionnaire	
Number of Statements in the Questionnaire	16 (Table 1)	
Measurement Scale	Likert 5-Point Scale [1: Strongly Disagree (SD); 2: Disagree (D); 3: Neutral (N); 4: Agree (A); and 5: Strongly Agree (SA)] (Kothari, 2010)	
Determination of Likert's Scale Value from Likert's Rating Scale	Likert's scale value for each answer in a independent variable are required to be determined to convert categorical responses into continuous data for performing the empirical analysis. However, the responses on Dependent Variable are kept at categorical level. The formula for calculation of Likert's scale value is:	

	Likert's Scale Value: $[\phi(x_1) - \phi(x_2)]/[\Phi(x_2) - \Phi(x_1)]$ $[\Phi(x_2) - \Phi(x_1)]$ is the cumulative percentage of respondents against each level of agreement. From these values, the values of x_1, x_2, $\phi(x_1)$, $\phi(x_2)$ for each answer to a statement has been obtained from the statistical table on 'Ordinates and Areas of the Distribution of Standard Normal Variable'. Now, putting the values in the above formula, the Likert's scale value for each answer to a statement has been obtained (Goon, et.al, 2013).
Analysis	*Statistical Technique*
Identification of underlying factors governing 'ethical responsibility of statutory auditors'	Exploratory Factor Analysis

Table 1: Selection of Variables

Variable Code	Variable Name	Rationale for Selection (***Based on Review of Literature and Other Secondary Information***)
Dependent Variable (DV)		
$\mathbf{V_1}$	Ethical responsibility of Statutory Auditors in Corporate Accounting Scandals	Duska, et. al. (2011), in their study pointed out that in the last few decades, absence of ethical behaviour of statutory auditors not only impaired their reputation but also impacted stakeholders of the business.
Independent Variables (IVs)		
$\mathbf{V_2}$	Recent accounting scandals as driver of ethical need	Earley & Kelly (2004) in their study, unearthed a few corporate accounting scandals where statutory auditors did not show their ethical responsibility. Because, of these accounting scandals, ethics became a centre of attention of

		the accounting profession.
V_3	Sufficiency of regulatory framework	Price Waterhouse, statutory auditors at Satyam was associated with a company for quite a long period of time, as the applicable Company law at that time did not have any provision on rotation of auditor (Fernando, 2010).
V_4	Strict enforcement of regulatory pronouncements	If regulatory framework governing statutory auditors is not properly enforced, their independence is not protected. In judiciary case Price Waterhouse & Co. vs. Securities and Exchange Board of India, 2010, it was observed that statutory auditor did not comply with applicable Standards on Auditing (SAs) while performing audit engagements.
V_5	Punitive actions	Disciplinary actions against statutory auditors are mentioned in the Chartered Accountants Act, 1949. However, in several cases of audit failure, (Council of Institute of Chartered Accountants of India vs. Shri S. N. Sachdeva, 2011) the auditors were only reprimanded. Thus, the existing disciplinary framework actually failed to encourage an auditor to perform ethically.
V_6	Moral behaviour influenced by cultural orientation	According to Rau & Weber (2004), certain values, like honesty, responsibility, respect which are influenced by the culture and family of the concerned person sometimes influence his moral behaviour.
V_7	Focus on internal values	Gowthrope & Blake (1998) in their book have given huge importance to core internal values in reinstating ethical compliance by statutory auditors.
V_8	Measures by professional bodies	Pendergast (2004) in his study opined that professional bodies should take adequate measures to restore ethical orientation of statutory auditors.
V_9	Ethical education	Swanson & Fisher (2009) in their study pointed out that ethical education in every sphere of life could help a

		person to understand the true meaning of ethics and its impact on decision making.
V_{10}	Inclusion of ethics in professional accounting curriculum	Bates and Waldrup (2008) has discussed that inclusion of ethics in professional accounting curriculum could help a statutory auditor to understand the ethical implication of every professional decision.
V_{11}	Awareness programmes on ethics	Jeffery (2004) in his edited book covered so many aspects of auditing. A few of the researches included in this book was about awareness programmes for statutory auditors. Awareness programmes on ethics could facilitate a practical approach to the ethical knowledge. This sometimes may prove to be beneficial in resolving ethical dilemma.
V_{12}	Collaboration between professional bodies and academia in reinstating ethics	Copeland (2005) in his study talked about a constructive collaboration between professional bodies and academic world. It could facilitate exchange of ideas in a wide spectrum. It would result in improvement in accounting curriculum and ethics would get a special importance in it.
V_{13}	Practical training and psychological development	According to Mayper, et. al. (2005) practical training on ethics directly addresses ethical problems faced by a statutory auditor.
V_{14}	Reward for ethical performance	If statutory auditors get rewarded for ethical performance, it might provide other auditors some impetus to be ethical in their future engagements.
V_{15}	Mass media as a medium of spreading ethical awareness	In this media centric environment, ethical awareness of auditors spread with the help of newspaper, television, social networking sites could improve the current situation.
V_{16}	Uniformity in regulatory framework	Vittal (2000) in his study said that in cross country audit engagements, auditors faltered in their ethical duty by

	across countries	using the loopholes of regulatory mismatch in two countries. This situation could be avoided if regulatory framework across the globe were uniform.

6. Results and Discussion

6.1 Demographic Profile of Respondents

A brief summary of the demographic profile of respondents is provided in the following table.

Table 2: Demographic Profile of Respondents

Demographic Profile Based on Gender											
Male	%	Female	%								
522	86.9	79	13.1								
Demographic Profile Based on Age											
Young (Age less than 30 years)	%	Middle Aged (Age between 30 and 50 years)	%	Experienced (Age more than 50 years)	%						
194	32.3	279	46.4	128	21.3						
Demographic Profile Based on Occupation											
CAs	%	CMAs	%	Academicians	%	Students	%	Investors	%	Corporate Executives	%
101	16.8	94	15.6	111	18.5	118	19.6	86	14.3	91	15.1

(Source: Compilation of Primary Data using SPSS.20)

Inferences

A very small proportion of respondents in this study are woman. It shows that that most the people in the select occupations are male. Most of the respondents for this current study are

middle aged followed by a young population. While the proportion of experienced respondents in the sample is comparatively small, they are not negligible. Hence, our entire data is fairly distributed in terms of age of respondents. Participation of each occupation in the overall data is almost equal. In terms of number of respondents in the total sample, Students top the list followed by Academicians. Participation of Investors in the overall sample is comparatively small than other occupational categories.

6.2 Reliability of Data

Details about reliability of data	Results
Technique to measure internal consistency and reliability of data	Chronbach's alpha (Peterson, 1994)
Chronbach's alpha value	0.7373
Decision	The value of 'α' is more than the threshold 0.6 (Chronbach, 1951). Hence, the data is considered to be reliable and internally consistent.

6.3 *Identifying Primary Factors Governing Ethical Responsibility of Statutory Auditors using Exploratory Factor Analysis*

In the study, there are 16 variables out of which, 15 variables (V_2 to V_{15}) are primarily assumed that they have influence on 'Ethical responsibility of Statutory Auditors in Corporate Accounting Scandals' (V_1). However, Exploratory Factor Analysis (EFA) is conducted to reduce the number of variables (15 variables) into some factors governing the stated theme of the study. In this section, an endeavour has been made to study the following:

(a) 'Fulfilment of assumptions of exploratory factor analysis'(*Refer to Section 6.3.1*);
(b) 'Factor analysis results'*(Refer to Section 6.3.2)*;
(c) 'Development of component plot in the rotated space'*(Refer to Section 6.3.3)*;
(d) 'Factor model development and interpretation'*(Refer to Section 6.3.4)*; and
(e) 'Factor model fitness' *(Refer to Section 6.3.5)*.

6.3.1. Fulfilment of Assumptions of Exploratory Factor Analysis

The assumptions for conducting Exploratory Factor Analysis are discussed in the following table (Malhotra, 2004).

Table 3: Fulfilment of Assumptions of Exploratory Factor Analysis

Sl. No.	Assumptions	Statistical Test used	Decision Criteria	Result	Fulfilment of Assumptions
1	Variables should be internally correlated	♦ Bartlett's Test of Sphericity.	P–Value should be less than 0.05	P–Value is less than 0.05	Satisfied
2	Sample must be adequate	♦ Kaiser Meyer Olkin (KMO) measure.	KMO should be greater than 0.5	KMO = 0.732	Satisfied

The above assumptions are satisfied for conducting exploratory factor analysis.

6.3.2. Factor Analysis Results

Subject to fulfilment of the aforesaid assumptions, Exploratory Factor Analysis is conducted. Components with Eigen Value more than 1 are extracted as factors. All the variables are grouped under the extracted factors based on Rotated Component Matrix (*Refer to Table 1, Annexure 1*) and the factors are named accordingly. Results of Factor Analysis is summarised here:

Table 4: Factor Analysis Result

Variable Code	Variable Name	Rotated Factor Loadings	Extracted Communality	Factor Code	Factors Name	Eigen Value	Percentage (%) of Variance Explained
V_{11}	Awareness programmes	**0.829**	0.789	**F_1**	**Practical Approache**	4.156	27.709

	on ethics (F_{1V11})				**s of Education on Ethics to Professionals**		
V_{12}	Collaboration between professional bodies and academia in reinstating ethics (F_{1V12})	**0.877**	0.835				
V_{13}	Practical training and psychological development (F_{1V13})	**0.871**	0.821				
V_8	Measures by professional bodies (F_{2V8})	**0.703**	0.658	**F_2**	**Increasing focus on Ethics in Education**	1.742	11.612
V_9	Ethical education (F_{2V9})	**0.826**	0.741				
V_{10}	Inclusion of ethics in professional accounting curriculum (F_{2V10})	**0.775**	0.693				
V_5	Punitive actions (F_{3V5})	**0.721**	0.579	**F_3**	**Punitive Action and Inner Values**	1.682	11.212
V_6	Moral behaviour	**0.735**	0.628				

	influenced by cultural orientation (F_{3V6})						
V_7	Focus on internal values (F_{3V7})	**0.706**	0.642				
V_{14}	Reward for ethical performance (F_{4V14})	**0.700**	0.540	**F_4**	**Public Awareness and Global Regulatory Convergence**	1.155	7.702
V_{15}	Mass media as a medium of spreading ethical awareness (F_{4V15})	**0.779**	0.646				
V_{16}	Uniformity in regulatory framework across countries (F_{4V16})	**0.698**	0.514				
V_2	Recent accounting scandals as driver of ethical need (F_{5V2})	**0.578**	0.489	**F_5**	**Regulatory Framework and Recent Events**	1.102	7.345
V_3	Sufficiency of	**–0.784**	0.712				

	regulatory framework (F_{5V3})						
V_4	Strict enforcement of regulatory pronouncements (F_{5V4})	**0.681**	0.552				
Total Percentage (%) of Variance Explained							65.579

(Source: Compilation of Field Survey Data using SPSS 20.0)

Inferences

- Out of initially selected 15 variables, 5 factors have been identified based on their Eigen values more than 1.
- Variables, F_{1V11} [Rotated Factor Loading (RFL): 0.829], F_{1V12} [RFL: 0.877] and F_{1V13} [RFL: 0.871] have significant absolute loadings with the first factor. Naturally they come under it. From the underlying nature of these variables, it is observed that certain practical approaches to teaching ethics e.g. awareness, orientation and training programmes on ethics come under this factor. Thus, Factor-1 is named as '**Practical Approaches of Education on Ethics to Professionals'.**
- Variables, F_{2V8} [RFL: 0.703], F_{2V9} [RFL: 0.826], and F_{2V10} [RFL: 0.775] are grouped under this factor. These variables mainly deal with measures taken by professional bodies and increased focus on ethics in accounting education. Naturally, the name of the Factor-2 is '**Increasing focus on Ethics in Education'.**
- The third factor includes variables, F_{3V5} [RFL: 0.721], F_{3V6} [RFL: 0.735], and F_{3V7} [RFL: 0.706]. By the nature of these variables, it is seen that internal values and moral behaviour is the main focus of the underlying variables. However, in terms of absolute loading, punitive action also comes under this factor which in a way also influences moral behaviour of a person. Keeping all that in mind, Factor-3 is named as '**Punitive Action and Inner Values**'.
- The following factor incorporates variables, such as F_{4V14} [RFL: 0.700], F_{4V15} [RFL: 0.779], and F_{4V16} [RFL: 0.698]. Measures that relate to improving public awareness and global

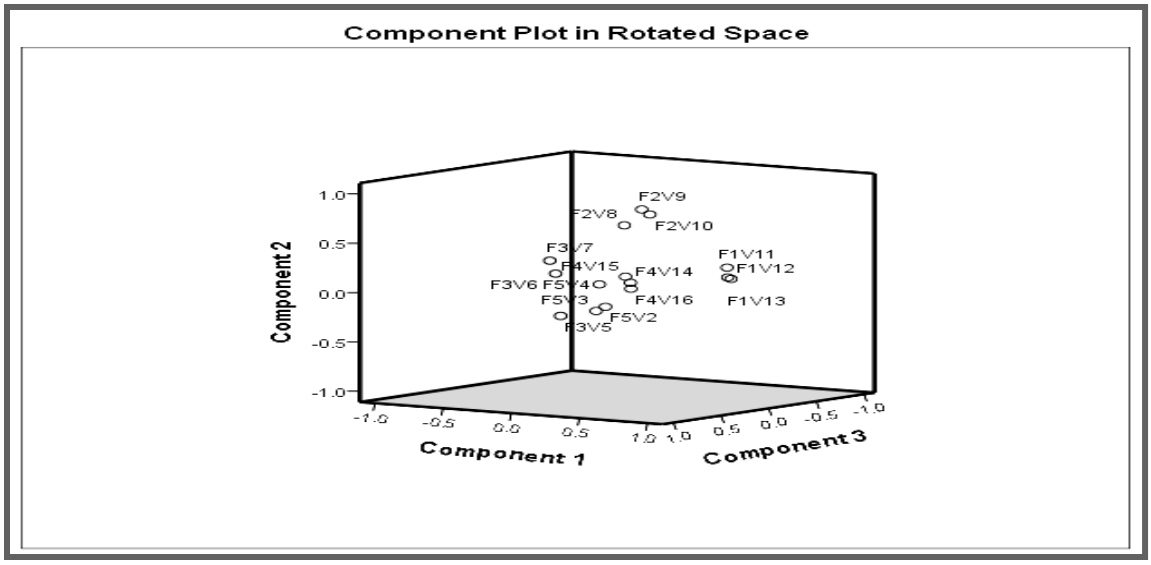
regulatory convergence are the main coverage of these variables. Hence, Factor-4 is named as '**Public Awareness and Global Regulatory Convergence**'.

- Variables, F_{5V2} [RFL: 0.578], F_{5V3} [RFL: –0.784], and F_{5V22} [RFL: 0.681] which represent regulatory laxity and recent cases of accounting frauds as the major reasons of increasing focus on ethical responsibility are grouped under this factor. Hence, the name '**Regulatory Framework and Recent Events**' for Factor-5 is appropriate.
- In terms of percentage of variance explained, 'Practical Approaches to Teaching Ethics to Professionals' (27.709%) is the most imperative factor influencing 'ethical responsibility of statutory auditors' followed by 'Increasing focus on Ethics in Education' (11.612%), 'Punitive Action and Inner Values' (11.212%) and so on. 'Regulatory Framework and Recent Events' (7.345%) is the least significant factor governing the stated theme.
- The factor model explains 65.58% of total variance. It is a substantial proportion in social science research.
- It is observed that variables, V_{12} and V_{13} have higher extracted communalities. It indicates that a larger proportion of variance of these variables is explained by the factor model. Hence, they have a considerable influence on the factor model. On the other hand, extracted communality for V_2 is really less. It indicates an insignificant influence of this variable on overall factor model.

6.3.3. Development of Component Plot in Rotated Space

'Component Loading Plot in Rotated Space' is a graphical representation of 'Rotated Component Matrix' which basically represents rotated factor loadings between underlying variables and extracted factors. Here, 5 factors are extracted. Hence, the plot has 5 dimensions. Relative positioning of different variables on these dimensions is portrayed through this plot. For convenience, variables are coded with respect to their governing factor *(Refer to Table 4).*

Figure 1: Component Plot in Rotated Space



(Source: Compilation of Field Survey Data using SPSS 20.0)

Inferences

Variables, $F_{1V11,}$ $F_{1V12,}$ and F_{1V13} grouped under F_1 have a close proximity among them. They together are close to the axis representing Factor–1. Variables, $F_{2V8,}$ $F_{2V9,}$ and F_{2V10} are found to have closeness among them. They have nearness to the axis representing Factor–2. Variables, $F_{3V5,}$ $F_{3V6,}$ and F_{3V7} are not very near to each other but they are adjacent to the axis representing Factor–3.

Variables, $F_{4V14,}$ $F_{4V15,}$ and F_{4V16} have a very close association among themselves. That is why they are grouped under Factor–4, represented by the adjacent axis. Finally, variables, $F_{5V2,}$ and F_{5V4} are very close, while F_{5V3} is slightly far from them. However, all three are close to the axis that represents Factor–5.

6.3.4 Factor Model Development and Interpretations

Factor Models, are developed based on 'Component Score Coefficient Matrix' *(Refer to Table 2, Annexure 1).* Individual factor models for the study are shown below:

Practical Approaches of Education on Ethics to Professionals (Factor-1)

⇨ $\mathbf{F_1 = 0.031V_2 + 0.065V_3 + 0.002V_4 + 0.073V_5 - 0.072V_6 - 0.120V_7 - 0.046V_8 - 0.098V_9 - 0.072V_{10} + 0.377V_{11} + 0.424V_{12} + 0.421V_{13} - 0.014V_{14} - 0.128V_{15} - 0.021V_{16}}$

Factor score coefficients are estimated from factor loadings. Hence, it is natural that the variable with high loading with a factor have high coefficient with it. Accordingly, variables, V_{11}, V_{12}, and V_{13} have high factor score coefficients which mean that these variables have high influence on this factor. In terms of magnitude of the coefficients, 'Collaboration between professional bodies and academia in reinstating ethics' (V_{12}) has highest influence.

Increasing focus on Ethics in Education (Factor-2)

⇨ $\mathbf{F_2 = -0.176V_2 - 0.119V_3 - 0.029V_4 - 0.228V_5 + 0.041V_6 + 0.142V_7 + 0.326V_8 + 0.443V_9 + 0.401V_{10} - 0.042V_{11} - 0.125V_{12} - 0.113V_{13} - 0.031V_{14} + 0.044V_{15} + -0.060V_{16}}$

Following the same rule as described above, a strong positive influence of variables, V_8, V_9, and V_{10} on Factor–2 is seen. 'Ethical education' (V_9) has highest impact on this factor.

Punitive Action and Inner Values (Factor-3)

⇨ $\mathbf{F_3 = 0.098V_2 + 0.238V_3 + 0.083V_4 + 0.439V_5 + 0.405V_6 + 0.374V_7 + 0.073V_8 - 0.084V_9 - 0.094V_{10} - 0.049V_{11} - 0.021V_{12} - 0.008V_{13} + 0.062V_{14} - 0.077V_{15} + 0.018V_{16}}$

Variables, V_5, V_6, and V_7 have considerable influence on this factor with 'Punitive actions' (V_5) depicting highest impact.

Public Awareness and Global Regulatory Convergence (Factor-4)

⇨ $\mathbf{F_4 = 0.095V_2 + 0.065V_3 - 0.128V_4 - 0.040V_5 + 0.070V_6 - 0.016V_7 - 0.055V_8 - 0.024V_9 + 0.027V_{10} - 0.051V_{11} - 0.021V_{12} + -0.057V_{13} + 0.434V_{14} + 0.484V_{15} + 0.425V_{16}}$

Variables, V_{14}, V_{15}, and V_{16} which are grouped under this factor eventually have substantial influence on this factor. In terms of magnitude of coefficients, 'Mass media as a medium of spreading ethical awareness' (V_{15}) is most influential.

Regulatory Framework and Recent Events (Factor-5)

⇨ $\mathbf{F_5 = 0.374V_2 - 0.587V_3 + 0.481V_4 + 0.044V_5 - 0.070V_6 - 0.068V_7 - 0.012V_8 - 0.012V_9 - 0.019V_{10} - 0.007V_{11} - 0.011V_{12} - 0.005V_{13} - 0.131V_{14} - 0.005V_{15} - 0.037V_{16}}$

Variables, V_2, V_3 and V_4 are major influencing variables of this factor. The magnitude of coefficients shows that 'Sufficiency of regulatory framework' (V_3) influences this factor most.

If Likert's scale value of each IV of a respondent is incorporated in the above equations, factor scores of that respondent with respect to that factor can be generated (Gaur, 1997). In the same way, factor scores of all 601 respondents can be generated for the 5 extracted factors. The purpose of data reduction through Factor Analysis is met.

6.3.5. Factor Model Fitness

The fitness of the factor model is estimated from Residual Correlation Matrix *(Refer to Table 3, Annexure 1).* A decision on model fitness is taken on the basis of the number of non–redundant residuals with absolute values greater than 0.05 (Sarkar, et. al., 2011). If the number is very large, the model cannot be considered to be fit. The total number of residuals is calculated from the formula [n×(n–1)÷2]. In this study, there are 15 variables. Hence, the total number of residuals are, (15×14÷2) = 105. Here, only 34 residuals out of 105 residuals have absolute value more than 0.05. It is only 32% of the total number of residuals. The proportion is insignificant in social science research. So, it can be concluded that the factor model perfectly fits the data.

7. Conclusions

Regulatory reforms are not sufficient enough to completely resolve the problem of audit failure, while enhancement of ethical orientation is very much essential as well. In this study, professional accountants, investors, corporate personnel, and people from academic fraternity have expressed their concern and pointed out some issues that eroded ethical behaviour of statutory auditor. In order to identify the primary factors governing ethical responsibility of statutory auditors the study identifies a few important issues that positively or negatively influence ethical behaviour of statutory auditors. Opinions of statutory auditors and other related groups are collected on those issues. Exploratory Factor Analysis is conducted on the data collected. Five factors covering five distinct dimensions have been identified. 'Practical Approaches of Education on Ethics to Professionals', 'Increasing focus on Ethics in Education', 'Punitive Action and Inner Values', 'Public Awareness and Global Regulatory Convergence',

and 'Regulatory Framework and Recent Events' are the factors that may govern statutory auditors' ethical responsibility.

The factors identified suggest that the Institute of Chartered Accountants of India (ICAI) should give maximum emphasis on practical training programmes for auditors. They should also organise awareness programmes, sometimes in collaboration with academic institutions. Aspiring statutory auditors should be taught the ethical implication of each of their professional decisions. Instituting a strict disciplinary mechanism may provide some solution to ethical failure of statutory auditors. Regulatory bodies, such as Peer Review Board, Quality Review Board (QRB), the Securities and Exchange Board of India (SEBI) should increase their effectiveness in enforcing existing regulations. A collaboration of all the aforesaid efforts may ultimately improve ethical responsibility of statutory auditors.

References

- Bates, H., Waldrup, B., & Calhoun, C. (2008). Ethics education in US accounting practices – A status report, *Proceedings of the Academy of Accounting and Financial Studies,* 13(1), 7–12.
- Chauhan, M., & Gupta, S. (2007). Ethical Audit: Stakeholders Perspective, *Chartered Accountant,* 56(5), 751-767.
- Chronbach, L. (1951). Coeffecient Alpha and the Internal Structure of Tests, *Psychometrika,* 3(1), 297-334.
- Copeland, J. (2005). Ethics as an Imperative, *Accounting Horizons,* 19(1), 35–43.
- Council of Institute of Chartered Accountants of India vs. Shri S.N. Sachdeva, No.1/ 2002 (Delhi High Court 2011).
- Duska, R., Duska, B., & Ragatz, J. (2011). *Accounting Ethics*, Wiley–Blackwell London.
- Earley, C., & Kelly, P. (2004). A note on ethics educational interventions in an undergraduate auditing course: Is there an Enron effect? *Issues in Accounting Education,* 19(1), 53-71.

- Elliott, R. (1995). The Future of Assurance Services: Implications for Academia, *Accounting Horizons*, 9(4), 118-127.
- Fernando, A. (2010). Satyam – Anything but Satyam, *Journal of Loyola Institute of Business Administration*, 89–104.
- Gaur, S. (1997, August). Factor Analysis of Developing Countries, *Journal of Policy Modelling*, 19(4), 407-415.
- Ghaffari, F., Kyriacou, O., & Brennan, R. (2008). Exploring the implementation of ethics in UK accounting programs, *Issues in Accounting Education*, 23(2), 183-198.
- Goon, A., Gupta, M., & Dasgupta, B. (2010). *Fundamentals of Statistics Vol. II*, World Press Private Ltd.
- Gowthrope, C., & Blake, J. (1998). *Ethical Issues in Accounting*, Routledge, London.
- Hasnas, J. (2007). Up from flatland: Business Ethics in the Age of Growing Divergence, *Business Ethics Quarterly*, 17(3).
- Ho, N., Ong, B., & Seonsu (1997). A Multicultural Comparison of Shopping Patterns among Asian Consumers, *Journal of Marketing Theory and Practice*, 5(1), 42-51.
- Hotelling, H. (1933). Analysis of Complex Statistical Variables in to Principle Component, *Journal of Educational Psychology*, 24, 417-441.
- Jeffery, C. (Ed.) (2004). *Research on Professional Responsibility and Ethics in Accounting – Volume 9*, JAI Press, Bingley.
- Kaiser, H. & Rice, J., & Jiffy, L. (1997). Mark IV, *Educational and Psychological Measurement*, 34(1), 111-117.
- Kothari, C. (2010). *Research Methodology: Methods and Techniques*, New Age International Publishers, New Delhi.
- Koumbiadis, N., & Okpara, J. (2008). Ethics and Accounting Profession: An Exploratory Study of Accounting Students in Post Secondary Institutions, *International Review of Business Research Papers*, 4(5), 147-156.

- Lovell, A. (1998). Assumptions, Values and Principles: Accounting in the Public Services, In "*Ethical Issues in Accounting*", Routledge.
- Malhotra, N. (2004). *Marketing Research: An Applied Orientation*, Pearson Education Asia.
- Mayper, A., Pavur, R., Merino, B., & Hoops, W. (2005). The Impact of Accounting Education on Ethical Values: An Institutional Perspective, *Accounting and the Public Interest*, 5, 32-55.
- Pendergast, M. (2002, July). Conceptual Development In Professional Ethics And Accountancy, *Chartered Accountant,* 51(1), 58–59.
- Peterson, R. (1994). A Meta-Analysis of Chronbach's co-efficient alpha, *Journal of Consumer Research*, 21, 381-91.
- Price Waterhouse & Co. vs. Securities and Exchange Board of India, 5249/ 2010 (Bombay High Court 2010).
- Rau, S., & Weber, J. (2004). The Impact of the Enron Mega–event on Auditors' Moral Reasoning, *Journal of Accounting and Finance Research*, 12(6), 106.
- Saha, S. (2015). *Ethical Role of Statutory Auditors on Corporate Scams*, Scholar's Press, Germany.
- Saha, S., & Roy, M. (2017). *Quality Control Procedure for Statutory Financial Audit: An Empirical Study*, Emerald Publishing Limited, United Kingdom.
- Sarkar, S., Bhattacharya, S., & Sengupta, P. (2011, July – September). Perspectives of Ecological Behavior and Attitude to the Environment: An Empirical Analysis of Kolkata Citizens, *Asia-Pacific Business Review*, 7(3), 176-187.
- Swanson, D., Swanson, D. (2009). Business Ethics Education: If We Don't Know Where We're Going, Any Road Will Take Us There, *Decision Line*, 40(4), 10.
- Vittal, N. (2000, November). Ethics and Code of Conduct, *Chartered Accountant*, 49(5), 19.

Annexure 1

Table 1: Rotated Component Matrix

Variables	Component				
	1	2	3	4	5
V_2	.072	–.152	.226	.274	.578
V_3	–.002	–.204	.218	–.090	–.784
V_4	.063	.081	.276	–.037	.681
V_5	.089	–.172	.721	–.040	.143
V_6	.062	.257	.735	.127	.048
V_7	.000	.378	.706	–.015	.025
V_8	.262	.703	.299	.013	.071
V_9	.221	.826	.058	.061	.052
V_{10}	.262	.775	.032	.145	.054
V_{11}	.829	.294	.034	.106	.045
V_{12}	.877	.187	.059	.155	.047
V_{13}	.871	.206	.086	.101	.050
V_{14}	.175	.085	.111	.700	–.018
V_{15}	–.013	.097	–.105	.779	.133
V_{16}	.127	.009	.037	.698	.093

(Source: Compilation of Field Survey Data using SPSS 20.0)

Table 2: Component Score Coefficient Matrix

Variables	Component				
	1	2	3	4	5
V_2	.031	–.176	.098	.095	.374
V_3	.065	–.119	.238	.065	–.587
V_4	.002	–.029	.083	–.128	.481
V_5	.073	–.228	.439	–.040	.044
V_6	–.072	.041	.405	.070	–.070
V_7	–.120	.142	.374	–.016	–.068
V_8	–.046	.326	.073	–.055	–.012
V_9	–.098	.443	–.084	–.024	–.012
V_{10}	–.072	.401	–.094	.027	–.019
V_{11}	.377	–.042	–.049	–.051	–.007
V_{12}	.424	–.125	–.021	–.021	–.011
V_{13}	.421	–.113	–.008	–.057	–.005
V_{14}	–.014	–.031	.062	.434	–.131
V_{15}	–.128	.044	–.077	.484	–.005
V_{16}	–.021	–.060	.018	.425	–.037

(Source: Compilation of Field Survey Data using SPSS 20.0)

Table 3: Residual Correlation Matrix

	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}	V_{15}	V_{16}
V_2		.145	–.232	–.096	.002	–.026	.002	.079	.092	.015	–.034	–.022	–.049	–.071	–.089
V_3	.145		.208	–.031	–.085	–.095	.017	.072	.072	–.006	–.023	–.023	–.043	.039	–.010
V_4	–.232	.208		–.054	–.061	–.052	–.004	–.006	.000	–.023	.008	–.007	.087	.038	.022

V_5	–.096	–.031	–.054		–.193	–.165	.015	.135	.073	–.007	–.034	–.032	–.037	.078	.023
V_6	.002	–.085	–.061	–.193		–.100	–.101	–.049	.010	–.024	.035	.034	–.026	–.038	–.032
V_7	–.026	–.095	–.052	–.165	–.100		–.035	–.121	–.076	.060	.022	.017	–.013	.026	.007
V_8	.002	.017	–.004	.015	–.101	–.035		–.076	–.167	.000	–.012	–.017	–.017	.040	.032
V_9	.079	.072	–.006	.135	–.049	–.121	–.076		–.046	–.048	.001	–.004	.005	–.024	.009
V_{10}	.092	.072	.000	.073	.010	–.076	–.167	–.046		–.003	–.026	–.013	–.023	–.048	.002
V_{11}	.015	–.006	–.023	–.007	–.024	.060	.000	–.048	–.003		–.082	–.096	–.036	.029	.006
V_{12}	–.034	–.023	.008	–.034	.035	.022	–.012	.001	–.026	–.082		–.070	.001	.018	–.026
V_{13}	–.022	–.023	–.007	–.032	.034	.017	–.017	–.004	–.013	–.096	–.070		–.012	.026	–.011
V_{14}	–.049	–.043	.087	–.037	–.026	–.013	–.017	.005	–.023	–.036	.001	–.012		–.170	–.239
V_{15}	–.071	.039	.038	.078	–.038	.026	.040	–.024	–.048	.029	.018	.026	–.170		–.179
V_{16}	–.089	–.010	.022	.023	–.032	.007	.032	.009	.002	.006	–.026	–.011	–.239	–.179	

(Source: Compilation of Field Survey Data using SPSS 20.0)